

Appl No. 10/045,698
Amdt. dated May 17, 2006
Reply to Office Action of November 30, 2005

Atty. Ref. 81800.0177
Customer No. 26021

Remarks/Arguments

Reconsideration of this application is requested.

Extension of Time/Request for Continued Examination

Requests for continued examination and a three month extension of the period for response to the final Office Action mailed on November 30, 2005 are enclosed. The extended period for response expires on May 30, 2006.

Claim Status

Claims 1-4 and 8-20 were presented.

Claim Rejections – 35 USC 102

Claims 1-4 and 8-20 are rejected under 35 USC 103(a) as obvious over Kihl (US 6,222,536) in view of Zakurdaev (US 2002/0073182). Applicant respectfully traverses these rejections and submits that neither Kihl nor Zakurdaev, taken alone or in combination, discloses, suggests or appreciates the fundamental features of the present invention as set forth in independent claims 1, 2, 8 and 17, as amended.

According to the present invention, a TCP/IP connection is established following a login demand from a network device 11 (or 12, etc.) in a local system 1 to a relay server 4. Once established, this TCP/IP connection is held or maintained. As described in paragraph [0024], with reference to Figure 2, once the TCP/IP connection with relay server 4 is established, network device 11 periodically transmits to relay server 4 a command to hold the connection, receives a confirmation response from relay server 4, and the connection is thereby held.

By using this held TCP/IP connection, communications between relay server 4 and network device 11 can be carried out in both directions without interference by a firewall or the like in gateway 13. In the prior art, when a relay server 4 attempts to transmit data to a network device 11 in a local system, the communication will be blocked by the gateway 13. This is due to the fact that the gateway 13 generally rejects access from outside the local system. The present invention, by contrast, takes advantage of the fact that the gateway permits access from the inside to the outside. A login demand is allowed to pass from device 11 to

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relay server 4 to establish a connection. Device 11 then holds or maintains the established connection with relay server 4 so that communications can pass unhindered in both directions between relay server 4 and network device 11 over the held connection.

Held TCP/IP connections are established with relay server 4 by other network devices in other local systems in the same manner. For example, network device 21 in local system 2 may also make a login demand to relay server 4. Once established, this TCP/IP connection is held or maintained. That is, network device 21 periodically transmits to relay server 4 a command to hold the connection, receives a confirmation response from relay server 4, and the connection is thereby held

Using its held connection with relay server 4, network device 11 (or network device 21, or any other network device having a held connection with relay server 4) may demand a connection for communication with another network device. For example, network device 11 may demand a connection with network device 21. This demand is transmitted from network device 11 to relay server 4 via its held TCP/IP connection with server 4. Server 4 then transmits a connection demand notification to network device 21 via its held connection with network device 21. If network device 21 accepts the demand for communication, relay server 4 associates the TCP/IP connections respectively held between devices 11 and 21, and relay server 4, to construct a dedicated communication channel for the devices. In this manner, a "virtual" direct connection is realized between network devices 11 and 21 for unhindered two-way communication, despite the fact that they reside in different local systems.

Independent claims 1, 2, 8 and 17 are amended to emphasize these inventive and distinguishing aspects. In particular, each of the independent claims now requires that held TCP/IP connections between the relay server and the network devices be established in response to login demands from the network devices, i.e., *the held TCP/IP connections are established at the initiative of the network devices.*

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When a network device having a held connection with the relay server demands a connection to another network device having a held connection with the relay server, the relay server associates the two held connections to establish a virtual direction connection between the two devices for unhindered two-way communication.

Kihl is directed to on-line banking systems and specifically addresses the use of multiple banking systems by a user. According to Kihl, this circumstance is problematic since each banking system uses its own customized software. Thus, a user who wants to use multiple banking systems would need the customized software for each system. Kihl's solution to this problem is a virtual banking relay server system 12 that essentially accepts a service request from a subscriber terminal 11, and converts that request into the format and protocol that is required by the particular bank system 13 that terminal 11 requested. Session management unit 23 of system 12 performs the protocol and format conversion.

System 12 does not facilitate unhindered, two-way direct communication between a terminal 11 and a bank system 13 by combining TCP/IP connections that it holds with each of terminal 11 and system 13. Rather, it accepts a request from terminal 11, formats it into the required protocol and format for the requested bank system 13, and then sends a properly formatted communication to bank system 13. Bank system 13 responds to terminal 11, and system 12 then performs protocol and format conversion and communicates with terminal 11. Thus, relay server system 12 communicates individually with each of terminal 11 and system 13. Requests from terminal 11 are formatted and put into a proper protocol. There is no direct communication between system 13 and terminal 11 using a combination of held TCP/IP connections, as is required by applicant's claims.

The Action acknowledges the substantial shortcomings of Kihl relative to applicant's claims, but asserts that Zakurdaev provides the elements that are lacking in Kihl. Applicant strongly disagrees and submits that Zakurdaev is as lacking in relevance to the present invention as is Kihl. Zakurdaev is concerned

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with the problem of delivering and loading the IP address of a user-selected Internet Service Provider (ISP) into the user terminal so that the user terminal can access the Internet through the ISP, noting that this is often a frustrating process necessitating calls to technical support and so on.

Zakurdaev's solution is a method for automatic generation of the IP address of the user-selected ISP and delivery of that IP address to the user terminal for automatic loading/installation. In particular, a user terminal 316, 324 or 336 transmits a request for an IP address (DHCPDISCOVER signal) to a gateway device 312 via, respectively, a private network 320, a wireless network 328 or a telephone network 340. Gateway device 312 forwards the DHCPDISCOVER signal via data network 314 to a smart DHCP relay, which is formed as part of a Network Operations Center (NOC) 304. NOC 304 includes a database 308 that maps user IDs or terminal IDs to ISPs. Once the proper ISP is determined, NOC 304 forwards the DHCPDISCOVER signal to the proper ISP (i.e. 344, 348 or 352). The ISP responds with a DHCPOFFER signal, including the IP address of the ISP, which is sent to NOC 304, to gateway device 312 and finally to the user terminal where it is automatically loaded.

Thus, Zakurdaev merely describes a system by which an ISP address is automatically retrieved and loaded into a user terminal. The Action equates Zakurdaev's gateway device 312 to applicant's claimed relay server. However, there is no disclosure that a held TCP/IP connection is established and maintained between a user terminal 316, 324, 336 and gateway 312 in response to a login demand from the user terminal, as is required for any analogy to applicant's claims. All that is disclosed by Zakurdaev is that a request is sent by one of the user terminals to gateway device 312 for the purpose of obtaining an ISP IP address. There is no disclosure, suggestion or reason to believe that a held TCP/IP is established between the user terminal and gateway device as a result of this request.

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Moreover, there is clearly no disclosure or suggestion that a held TCP/IP connection is established and maintained between ISPs 344, 348, 352 and gateway device 312 in response to a login demand by the ISP, as is also required for analogy to applicant's claims. Rather, Zakurdaev only discloses that ISPs 344, 348 and 352 respond to DHCPDISCOVER signals with DHCPOFFER signals. There is no suggestion of or motivation to establish a held connection, and certainly not a held connection created at the initiative or login of the ISP.

In view of the above, there can be no disclosure or suggestion in Zakurdaev to combine held connections to establish a "virtual" direction connection for unhindered two-way communications between the network devices (i.e. terminals 316, 324, 336 and ISPs 344, 348, 352). Zakurdaev's ISPs merely respond to a DHCPDISCOVER signal that was forwarded to them via a gateway device 312 and NOC 304. There are no held connections between a relay server and network devices in different local systems, established at the initiative of the network devices, that are then combined for communications between the network devices, as is required by applicant's claims.

Since Kihl and Zakurdaev do not teach or suggest each and every element of claims 1, 2, 8 and 17, it cannot render those claims or claims dependent thereon obvious. The rejections under 35 USC 103(a) should be withdrawn.

Conclusion

This application is now in condition for allowance. The Examiner is invited to telephone the undersigned to resolve any issues that remain after entry of this amendment.

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Any fees due with this response may be charged to our Deposit Account No.
50-1314.

Respectfully submitted,
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